

ABSTRACT

A high strength and high toughness magnesium alloy, characterized in that it is a plastically worked product produced by a method comprising preparing a magnesium cast product containing a atomic % of Zn, b atomic % in total of at least one element selected from the group consisting of Dy, Ho and Er, a and b satisfying the following formulae (1) to (3), and the balance amount of Mg, subjecting the magnesium alloy cast product to a plastic working to form a plastically worked product, and it has a hcp structure magnesium phase and a long period stacking structure phase at an ordinary temperature; (1) $0.2 \leq a \leq 5.0$ (2) $0.2 \leq b \leq 5.0$ (3) $0.5a - 0.5 \leq b$.